

## Present knowledge on the distribution of *Erebia christi* (Nymphalidae : Satyrinae) in the Italian Alps

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**Summary.** The geographical distribution of *Erebia christi* Rätzer, 1890 in the southern valleys of the Italian Pennine and Lepontine Alps was investigated. It was found that *E. christi* is much more widely distributed in Italy than in Switzerland. Besides the Alpe Veglia and the Antrona Valley, where it was reported by G. Leigheb in 1976, it is also present in the Valley of Bognanco and in the Devero Valley, as far as Lake Lagaro.

**Zusammenfassung.** Die geographische Verbreitung von *Erebia christi* Rätzer, 1890 in den Südtälern der Penninischen und Lepontinischen Alpen (Italien) wurde detailliert untersucht. Es stellte sich heraus, daß *E. christi* in Italien viel weiter verbreitet ist als in der Schweiz. Neben den Alpe Veglia und dem Tal von Antrona, von wo G. Leigheb bereits 1976 die Art gemeldet hatte, kommt *E. christi* auch in den Tälern von Bognanco und Devero vor sowie bis zum Lagaro-See.

**Résumé.** La distribution géographique de *Erebia christi* Rätzer, 1890 dans les vallées méridionales des Alpes Pennines et Lepontines en Italie a été étudiée. Il s'est révélé que *E. christi* est bien plus largement répandue en Italie qu'en Suisse. A part les Alpe Veglia et la Vallée d'Antrona, d'où elle fût rapportée par G. Leigheb en 1976, elle est également présente dans la Vallée de Bognanco et dans la Vallée de Devero, aussi loin qu'au Lac de Lagaro.

Key words: Satyrinae, *Erebia christi*, distribution, Italian Alps.

*Erebia christi* Rätzer, 1890, whose presence in Italy was unknown both to Verity (1953) and to Higgins & Riley (1983), was discovered by Leigheb (1976) in Piedmont, north of Novara, on the southern slopes of the eastern Pennine Alps. *E. christi* was found:

- on the Alpe Veglia, now a protected area (Regional Park), which lies east of Mount Leone (3552 m) and to the north-west of Domodossola, an area which is adjacent to the Divedro Valley, which leads to the Simplon Pass, and is therefore relatively close to the Laquinthal (Laggintal) in southern Switzerland, the locus typicus of the species (Verity, 1953; Higgins & Riley, 1983);
- in the Antrona Valley (fig. 1), which reaches up to Antronapiana and the lakes above it, bordering on the Swischbergen Valley, where *E. christi* has also been reported (Leigheb, 1976).

As it seemed possible that *E. christi* might have a more widespread distribution in Italy, during the past years we have searched for the species in all the Italian valleys near the localities mentioned above. The presence of *E. christi* was confirmed in the two previously discovered Italian localities (in 1989, 1990, 1991 and 1995).

Three males (now in the collections of G. Leigheb and S. Cecchin) were also taken in the Devero Valley east of the Alpe Veglia, at an altitude of between 1700 and 1800 m, in an unusual habitat for this species on the Italian side of the Alps (very woody and not very steep slopes). In this same valley (now a Natural Park), *Clossiana thore* (Hübner, [1804]) was also taken for the first time.

On July 17th, 1993, after a careful search around Lake Lagaro, east of the Alpe Devero, two worn males (now in the collections of G. Leigheb and S. Cecchin) were captured on the rocky slopes facing south-east above the lake at 1600–1700 m. In spite of the suitable nature of the area (fig. 2), *E. christi* did not seem very common. On July 24th, 1993, three rather worn *E. christi* (one male and two females, now in the collections of G. Leigheb and E. Riboni) were taken north of Bognanco, west of Domodossola, at about 1700 m. Here the species lives on steep rocky slopes surrounded by almost vertical walls of gneiss, with small terraces covered with *Festuca ovina*, the larval host plant of the species, and rare larch trees (figs. 3 & 4). The butterflies drift slowly down the mountainside during the warmer hours of the day. A search for *E. christi* in the adjacent areas, at the same and higher altitudes, proved fruitless.



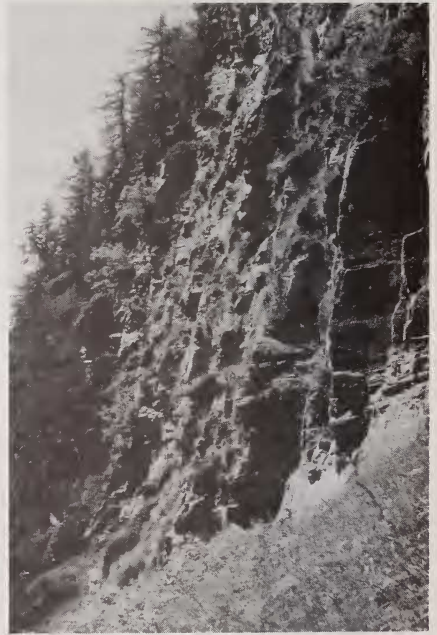
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Fig. 1. Typical biotope of *Erebia christi* in the Antrona Valley.

Fig. 2. Rocky slopes above Lake Lagaro in July.

Fig. 3. Biotope of *Erebia christi* north of Bognanco.

Fig. 4. As fig. 3. Steep rocky slopes surrounded by vertical walls of gneiss.

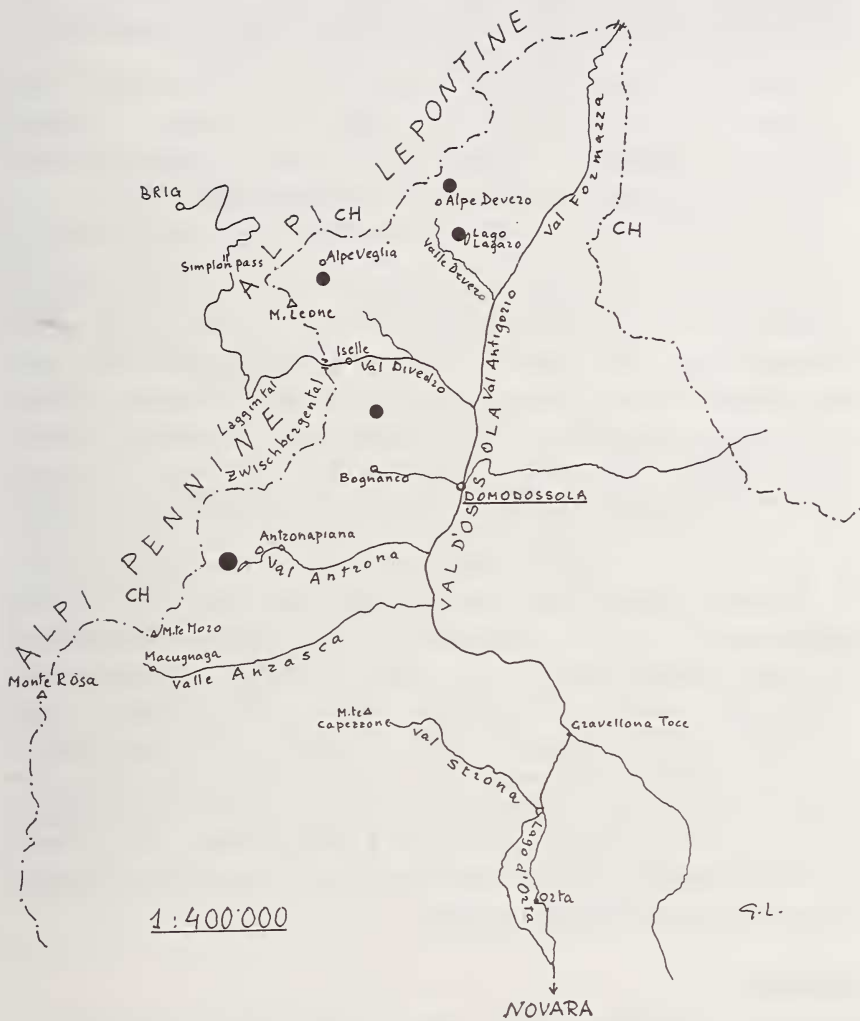


Fig. 5. Map showing the distribution of *Erebia christi* on the Italian side of the Pennine and Lepontine Alps, as known at present.

So far, *E. christi* has not been found in other outlying valleys such as the Anzasca Valley, near Mount Rosa, between Macugnaga and Mount Moro and, to the south, the Strona Valley north-west of Lake Orta, at the base of Mount Capezzone or, further north, the Antigorio and Formazza Valleys.

In the areas cited above, *E. christi* is sympatric with the more common *E. epiphron* (Knoch, 1783), *E. mnestra* (Hübner, [1804]), *E. melampus* (Fuessly, 1775) and *E. pharte* (Hübner, [1804]), from which it is often hard to distinguish in flight.

The available data, although restricted to a small number of specimens on account of the late period of observation, may be complemented in the future, but indicate that *E. christi* is diffusely present over an area that spans from the eastern slopes of the Pennine Alps to the western slopes of the Lepontine Alps, from the Antrona Valley (western limit) to the Devero Valley, whereas its diffusion eastwards, to the Antigorio and Formazza Valleys, seems limited. The area in which it has been found measures about 40 km in latitude (fig. 5). In this area, although it is confined to very restricted biotopes typical of a peculiar alpine environment at an altitude of between 1600 and 1800 m, *E. christi* is present in isolated colonies over a much wider area than was formerly believed and is more widespread in Italy than in Switzerland. On the southern slopes of the Alps, *E. christi* is present more to the west than *E. flavofasciata* Heyne, 1895, which in Italy is present in the Formazza Valley (Leigheb, 1976) and reaches the Alpe Veglia to the west. This corresponds to the main geographical distribution of these two species in Switzerland (Higgins & Riley, 1983; Groupe de travail des Lépidoptéristes, 1987), where *E. christi* inhabits a much smaller area but *E. flavofasciata* reaches as far east as the Engadina Valley.

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